



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

DEC 20 2001

Gene Bernardi, Co-Chair
Committee to Minimize Toxic Waste
9 Arden Road
Berkeley, CA 94704

Mark McDonald, Acting Co-Chair
Committee to Minimize Toxic Waste
1815 Parker Street
Berkeley, CA 94703

Dear Ms. Bernardi and Mr. McDonald:

Wayne Nastri asked me to respond to your October 15, 2001 letter requesting that EPA broaden its Superfund evaluation of the Lawrence Berkeley National Laboratory (LBNL), and your October 30, 2001 letter expressing concerns about tree cutting at LBNL and requesting to be advised of future vegetation sampling and to be consulted regarding the trees to be sampled. Enclosed is a detailed response to the Superfund site evaluation issues you have raised. In addition, we want to provide to you a status update of EPA's Superfund evaluation of LBNL. Regarding the vegetation sampling, we are reviewing whether cutting the trees will affect the validity of the sampling plan, and we plan to respond to you more fully by mid-January. We will also encourage LBNL to provide information to the public on this issue.

As you know, EPA asked the U.S. Department of Energy (DOE) in 1998 to conduct additional sampling and monitoring in and around the National Tritium Labeling Facility (NTLF) at LBNL. EPA's purpose in requesting this additional sampling was to obtain more current analytical data which we need to evaluate LBNL for possible listing on the National Priorities List (NPL), and to better characterize site conditions. EPA specifically asked DOE to collect soil, surface water and sediment samples, and to expand the ambient air monitoring network at the NTLF. LBNL staff developed the Tritium Sampling and Analysis Plan with considerable community input through the Tritium Issues Work Group and, more recently, the LBNL Environmental Sampling Project Task Force. With this input, LBNL expanded the scope of the tritium sampling project to include vegetation sampling to measure the accumulation of tritium in trees located near the NTLF. Although the vegetation sampling data is not needed for the Superfund evaluation, EPA agrees with CMTW that this information will improve our understanding of past air releases of tritium at the NTLF.

LBNL collected the soil, surface water and sediment samples this past spring and summer, and has completed several rounds of ambient air sampling. EPA Region 9's Quality in January 2002. This review includes independent reviews of LBNL's data validation process and their sampling and analysis system. The data validation process review includes independently verifying 10 percent of the LBNL data and comparing the EPA validation results with the LBNL validation results. EPA reviews LBNL's sampling and analysis system by comparing the results of samples, which were collected by EPA personnel at the same time LBNL collected its samples (these are sometimes called "split samples"), to LBNL data results. The laboratory results for the split samples should be available in January 2002. Although LBNL staff have collected vegetation samples, EPA believes that additional vegetation sampling may be needed.

EPA will evaluate the soil, surface water, sediment and ambient air data described above, and make a decision on the NPL listing issue early next year. In the meantime, we will continue to work with the community, the LBNL Environmental Sampling Task Force, LBNL and DOE to complete the Superfund assessment

Thanks again for your letter. If you have any questions, please call Philip Armstrong of my staff at (415) 972-3098.

Sincerely,
Jane Diamond, Acting Director
Superfund Division

Enclosure

cc: Wayne Nastri, Regional Administrator, w/enclosure
Senator Dianne Feinstein, w/enclosure
Senator Barbara Boxer, w/enclosure
Representative Barbara Lee, w/enclosure .
David McGraw, LBNL, w/enclosure
Michael Bessette Rochette, RWQCB, w/enclosure
Mayor Shirley Dean and Members of the Berkeley City Council, w/enclosure
Mayor Jerry Brown and Members of the Oakland City Council, w/enclosure

ENCLOSURE

Introduction

EPA has considered issues raised by the Committee to Minimize Toxic Waste (CMTW) in their letter to Wayne Nastri, Regional Administrator for Region 9, dated October 15, 2001. This enclosure responds to specific questions and issues raised by CMTW concerning the Superfund site assessment process used by EP A to screen and prioritize sites for possible listing on the National Priorities List (NPL), and EPA's assessment of the Lawrence Berkeley National Laboratory (LBNL).

Many of the questions raised by CMTW are beyond the scope of the Hazard Ranking System (HRS) model used by EP A to assess potential Superfund sites. The Superfund site assessment process is a screening tool, and is not designed to fully characterize the nature and extent of contamination at individual sites. Nor is it designed to fully characterize site risks, or to form the basis of cleanup decisions. Although EP A does not investigate every potential contamination problem during the site assessment phase, some of the issues raised by CMTW may warrant further site investigation and analysis by the U.S. Department of Energy (DOE) and LBNL.

Ground Water

CMTW Comment:

- a) The Regional Water Quality Control Board (RWQCB) has requested "U.S. EPA evaluate all beneficial uses of surface water and groundwater as identified in our Basin Plan, including domestic and municipal drinking water supply beneficial use, in the HRS determination." (ref.: RWQCB's March 28, 2001 and May 1, 2001 letters to LBNL) This evaluation requires sampling of soil water and groundwater under, around and downhill from the underground portion of the tritium stack. Sampling should also be done at the southernmost tip of the tritium groundwater contamination plume to determine whether the plume has again migrated offsite.

EPA Response:

As noted above; many of the questions raised by CMTW are beyond the scope of the Hazard Ranking System (HRS) model. For the groundwater pathway, the HRS does not consider potential future groundwater usage. The HRS considers only the following factors: the distance to the nearest drinking water well; the population served by drinking water wells within 4 miles of the site; use of groundwater for irrigation of commercial food crops or commercial forage crops, watering of commercial livestock, ingredient in commercial food preparation, supply for commercial aquaculture, or supply for a major or designated water recreation area; and wellhead protection areas designated according to Section 1428 of the Safe Drinking Water Act as amended.

CMTW Comment:

b) There are at the very least two active groundwater wells within 4 miles of LBNL (ref.: RWQCB's March 27, 2001 letter to LBNL). Also, please contact City of Berkeley Toxics Management Division for Well survey update.

EPA Response:

We understand that the groundwater wells referenced in the RWQCB's March 27, 2001 letter to LBNL are not being used for any of the purposes that are considered under the HRS. Furthermore, Nabil Al-Hadithy and Geoff Fiedler of the City of Berkeley have informed us that the City of Berkeley is not aware of any drinking water wells within 4 miles of the site.

Tritium Stack

CMTW Comment:

CMTW proposes that EPA should include the underground portion of the tritium stack in the Superfund site evaluation as well as sampling for potential releases of ambient air, vegetation, soil, rain water, surface water, and groundwater while the National Tritium Labeling Facility (NTLF) is being decommissioned and is undergoing decontamination.

EPA Response:

As noted above, the HRS is not designed to fully characterize site risks, or to form the basis of cleanup decisions. Our understanding is that DOE plans to conduct the decommissioning and decontamination work for the NTLF under DOE regulations and authority, to continue to monitor the air emissions under the National Emissions Standards for Hazardous Air Pollutants (NESHAPs) program, and to address hazardous wastes under State and federal waste management regulations. LBNL has conducted ambient air, sediment, soil, surface water, and vegetation sampling around the NTLF under the Tritium Sampling and Analysis Plan (TSAP) which incorporated EPA's comments. Under the TSAP, LBNL continues to take ambient air samples. As previously discussed, since groundwater within 4 miles of the site is not being used for drinking water by human beings, there is no basis for EPA to ask LBNL to sample groundwater for HRS purposes. Likewise, rain water samples are not needed because the ambient air samples collected by LBNL are sufficient to document the release of tritium to the ambient air.

Endangered Species

CMTW Comment:

- a) LBNL was designated on October 3, 2000 as critical habitat for the Alameda Whipsnake under the Endangered Species Act of 1973 as amended.

EPA Response:

We understand that the entire UC Berkeley campus is considered to be critical habitat for the Alameda Whipsnake.

CMTW Comment:

- b) The Three Spine Stickleback, a fish which inhabits Strawberry Creek, is endangered.

EPA Response:

We understand that the unannored three-spine stickleback (*Gasterosteus aculeatus williamsoni*), an endangered species, inhabits Strawberry Creek.

Lawrence Hall of Science (LHS)

CMTW Comment:

- a) LHS is a school and must be treated as such (for HRS calculations) just as it is for NESHAPs.

EPA Response:

We understand that some community members believe that EPA's HRS evaluation of LBNL ignores potential health threats to school children visiting LHS. While the HRS model does not include occasional visitors (such as children visiting LHS) in the HRS calculation for the soil exposure pathway, it makes other conservative assumptions which are factored into the site score. For the resident population factor, the HRS model counts residents, students at schools or day care facilities, and workers if the residence, school, day care facility, or workplace is located in an area that is contaminated by the site. In addition, terrestrial sensitive environments in a contaminated area and contaminated areas that are used for commercial agriculture, commercial silviculture, or commercial livestock production or grazing are also counted. Please note that the HRS Guidance Manual, Publication 9345.1-07, November 1992, defines students as full- or part-time attendees of an educational institution or day care facility located on or within 200 feet of an area of observed contamination. Consequently, even if we were to treat LHS as a school, this would not affect the HRS calculation because the students who visit LHS on

field trips attend school elsewhere, and there are no students who attend school at LHS on a full- or part-time basis.

CMTW Comment:

b) The large staff of non-DOE full time employees working at LHS must be addressed in computation of the HRS.

EPA Response:

EPA will consider these employees in the HRS computation.

Other Areas requiring Decommissioning and Decontamination

CMTW Comment:

Girton Hall Child Care Center, Cal students and their dormitories are within 1/4 mile of that portion of LBNL known as Melvin Calvin Laboratory where tritium in ambient air samples, considered in the LBNL reassessment, contributed to LBNL's qualification as a Superfund site. Therefore, this area of LBNL requires decommissioning and decontamination as well.

EPA Response:

Since DOE conducts decommissioning and decontamination work under DOE regulations and authority, DOE will need to decide which areas of LBNL to decommission and decontaminate.

Institut fur Energie und Umweltforschung (IFEU) "Review of Radiological Monitoring at LBNL. Final Report

CMTW Comment:

a) LBNL has selected ThermoNUtech for laboratory analysis of soil and other samples. Please note in IFEU Final Report on pp. 31 -33 that ThermoNUtech's performance in analyzing samples, other than tritium in water, is not reliable.

EPA Response:

We noted that IFEU's draft final report on Review of Radiological Monitoring at LBNL dated February 2, 2001 does not state that ThermoNUtech's performance in analyzing samples, other than tritium in water, is not reliable. Rather, it states that LBNL should evaluate more closely the reasons for the decline in ThermoNUtech's performance rating for other types of analysis and, in particular, for soil samples. Performance samples are designed to test a laboratory's performance relative to other proficient laboratories and

hence ensure comparability between laboratories. There is no consideration of the level of accuracy required by a specific project in making a determination of acceptable performance. We wish to emphasize that Superfund generates data that is legally and technically defensible by using a rigorous quality assurance and control program. This program includes numerous tests of accuracy and precision to substantiate performance on the actual samples at the time of analysis. In addition, EPA and DOE went beyond normal levels of effort to demonstrate accurate and reliable data by performing split samples between different laboratories and organizations. Consequently, we have reason to be confident that the data we are using are legally and technically defensible.

CMTW Comment:

b) WEU proposes that EP A provide two separate sets of HRS calculations (pg. 34, para. 3): "It is also recommended that EP A should provide information as to how the hazard ranking score would change if Lawrence Hall of Science would be regarded as a school, accounting for student population."

EPA Response:

Our understanding is that the IFEU draft final report proposed that EP A consider UIS as a school accounting for full time equivalent visitor population (based on 300,000 visitors per year, one-third of whom are students) plus resident staff. As noted previously, the HRS model does not include occasional visitors, or students who attend school elsewhere, in the HRS calculation, but EP A will consider the staff at UIS as workers in calculating the site score.

CMTW Comment:

c) The uranium leak into the soil at the 184-inch Synchrocyclotron should be reinvestigated to independently verify the validity of LBNL's claim that the concentrations were within the range of naturally occurring uranium. (Also see U.S. DOE office of EHS, Tiger Team Assessment of LBL", February 1991, p. 3-159.)

EPA Response:

We understand that DOE plans to address potential uranium contamination at the 184-inch Synchrocyclotron when the Advanced Light Source facility is decommissioned.

Other Radionuclide Contamination CMTW Comment:

The radionuclide contamination from the accelerators in buildings 51 and 71 must be assessed through an adequate sampling plan and their cumulative effects along with tritium, be computed in the HRS.

EPA Response:

Our understanding is that DOE has no current plans to decommission these facilities. We also understand that plans are being made to return these areas to beneficial use at some time in the future and to address potential contamination at that time.